COPY

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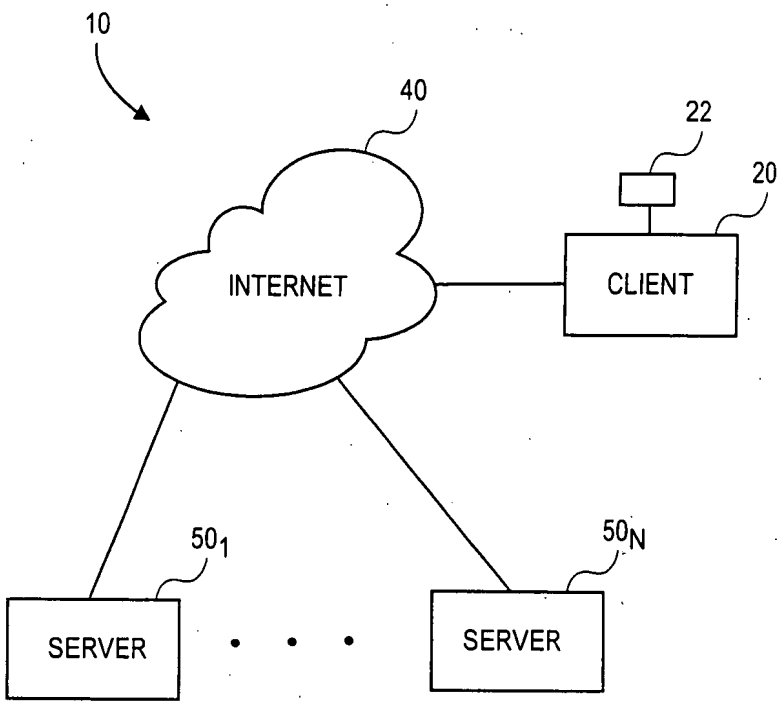

FIG. 1

COPY

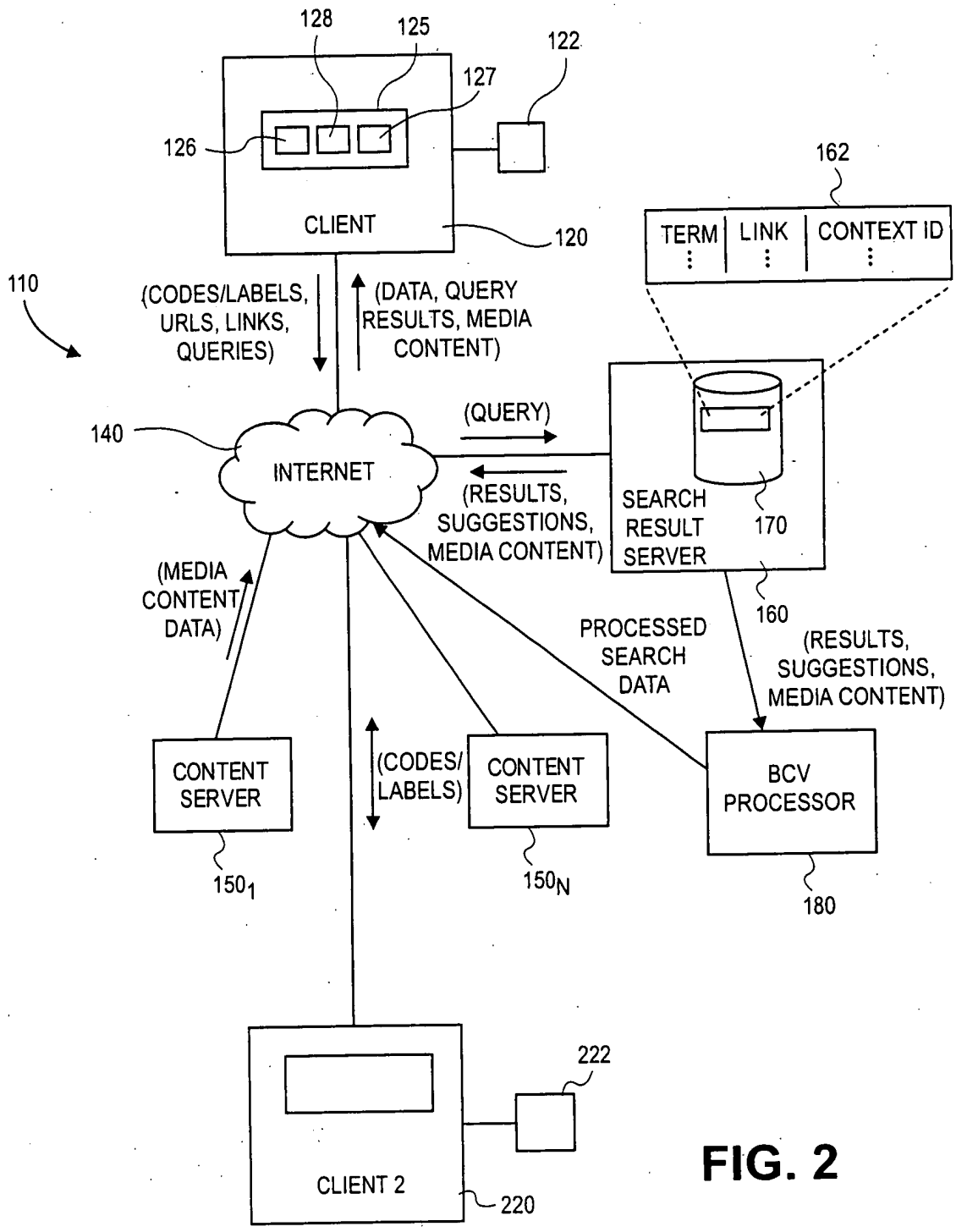
128
125
122
127
126
CLIENT
120
162
TERM
LINK
CONTEXT ID
110
(CODES/LABELS, URLS, LINKS, QUERIES)
(DATA, QUERY RESULTS, MEDIA CONTENT)
140
INTERNET
(QUERY)
(RESULTS, SUGGESTIONS, MEDIA CONTENT)
SEARCH RESULT SERVER
170
160
(MEDIA CONTENT DATA)
PROCESSED SEARCH DATA
(RESULTS, SUGGESTIONS, MEDIA CONTENT)
CONTENT SERVER
(CODES/ LABELS)
CONTENT SERVER
BCV PROCESSOR
150$_1$
150$_N$
180
222
CLIENT 2
220

FIG. 2

COPY

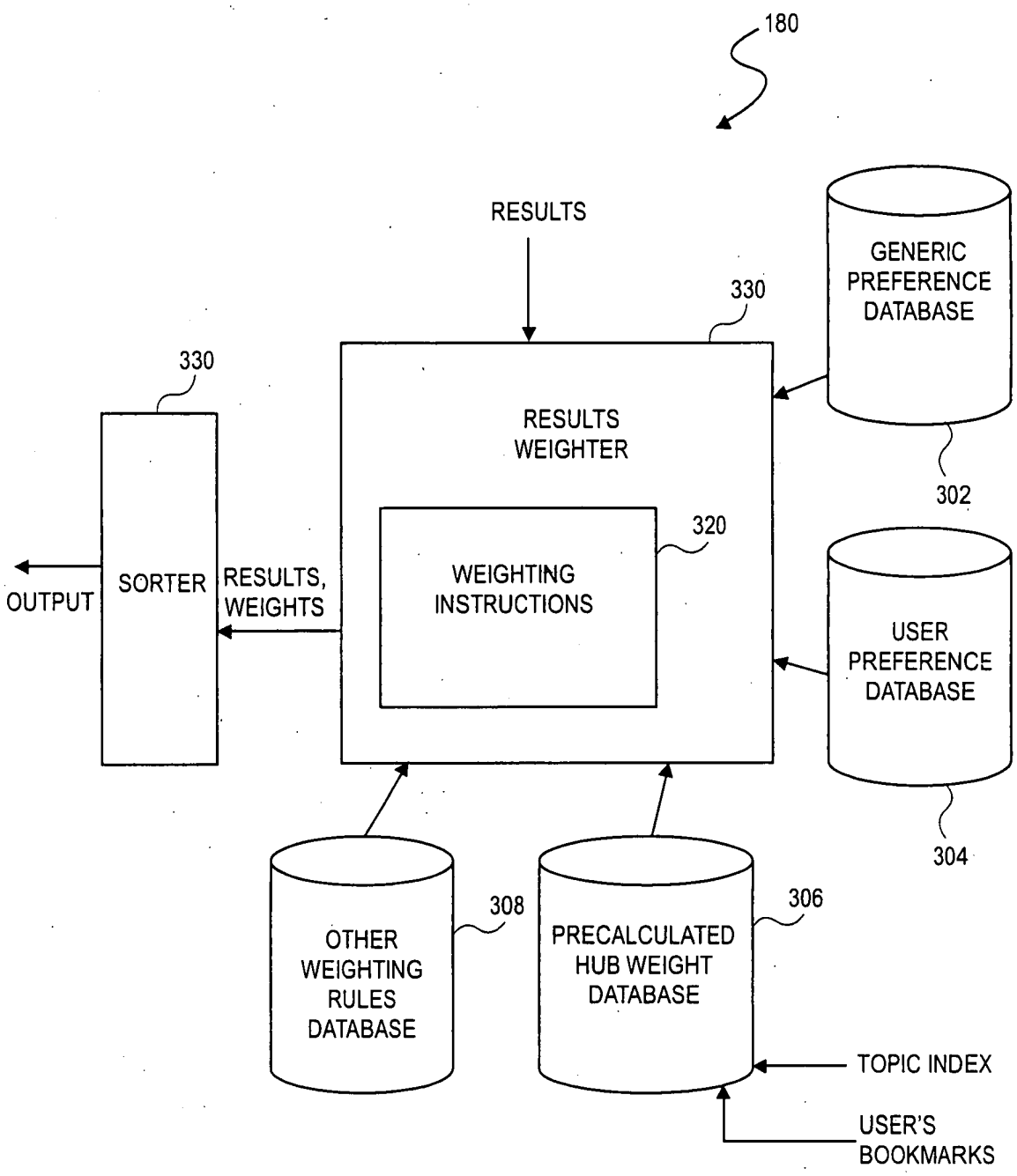
180
RESULTS
330
GENERIC PREFERENCE DATABASE
330
RESULTS WEIGHTER
302
320
WEIGHTING INSTRUCTIONS
SORTER
RESULTS, WEIGHTS
OUTPUT
USER PREFERENCE DATABASE
304
308
OTHER WEIGHTING RULES DATABASE
306
PRECALCULATED HUB WEIGHT DATABASE
TOPIC INDEX
USER'S BOOKMARKS

FIG. 3

COPY


```
p = BCP (b, w, α) Bookmark-Coloring Process
Input: A bookmark b, a promotional amount w, a retention coefficient α.
Output: BCV p.
p = 0
p_b += α•w
if ( stopping criterion is met) stop
for all links b → j in L
        p = p + BCP (j, (1 - s) • w /deg(b), α)
end for
```

FIG. 4

```
p = BCP (b, α, e) Bookmark-Coloring Process
Input: A bookmark b, a retention coefficient α, and a tolerance threshold e.
Output: BCV p.
Initialize Q as a single pair queue {(b,1)}
p = 0
while ( Q is not empty )
        pop a queue Q element (i, w)
        pi += α • w                          // retained portion
        if ( w < e )                         // stopping criterion
                continue                     // to beginning of while-loop
        z = (1 - α) • w / deg(i)             // distributed amount
        for all links i  j in L              // i is fixed: direct link access
                if ( pair (j, s) is present in Q )   // direct Q access
                        s += z               // existent element update
                else                         // no j element in the queue
                        add a new pair(j, z) to Q    // new queue element
        end for
end while
```

FIG. 5

```
[v, s] = BC (b, w, α| H) H-Relative Conceptual Bookmark-Coloring Process
Input: A bookmark b ∉ H , an amount w, a coefficient , and a hub H.
Output: H-relative BCV v and blocked s.
v = 0, s = 0
if (b ∈ H )
        s_b += w
else
        p_b += α • w
        if ( stopping criterion is met) stop
        for all links b  j in L
                [v, s] = [v, s] + BCP (j, (1 - α) •w /deg(b), α | H)
        end for
end else
```

FIG. 6

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```
p = BCP (b, w, α) Bookmark-Coloring Process
Input: A bookmark b, a promotional amount w, a retention coefficient α.
Output: BCV p.
p = 0
p_b += α•w
if ( stopping criterion is met) stop
for all links b→j in E
        p = p + BCP (j, (1 - α) • w /deg(b), α)
end for
```

FIG. 4

```
p = BCP (b, α, e) Bookmark-Coloring Process
Input: A bookmark b, a retention coefficient α, and a tolerance threshold e.
Output: BCV p.
Initialize Q as a single pair queue {(b,1)}
p = 0
while ( Q is not empty )
        pop a queue Q element (i, w)
        pi += α • w                                  // retained portion
        if ( w < e )                                 // stopping criterion
                continue                             // to beginning of while-loop
        z = (1 - α) • w / deg(i)                     // distributed amount
        for all links i→j in E                       // i is fixed: direct link access
                if ( pair (j, s) is present in Q )   // direct Q access
                        s += z                       // existent element update
                else                                 // no j element in the queue
                        add a new pair(j, z) to Q    // new queue element
        end for
end while
```

FIG. 5

```
[v, s] = BC (b, w, α| H) H-Relative Conceptual Bookmark-Coloring Process
Input: A bookmark b ∉ H , an amount w, a coefficient , and a hub H.
Output: H-relative BCV v and blocked s.
v = 0, s = 0
if (b ∈ H )
        s_b += w
else
        p_b += α • w
        if ( stopping criterion is met) stop
        for all links b →j in E
                [v, s] = [v, s] + BCP (j, (1 - α) •w /deg(b), α | H)
        end for
end else
```

FIG. 6